



# PLANE NEWS

## 主席簡報

## Chairman's Message

During the past year, the Association continued to play a significant role in the engineering field. We have organised many activities in promoting local engineers' participation in public affairs including community work, and making comments on various political issues and government proposals, as well as post-disaster reconstruction work in Sichuan Province. We also nominated representatives to participate in many public forums, government's public engagement activities and focus group meetings to express engineering professionals' views and to assist in pushing for early commencement of various infrastructure projects. The steady growth of membership of the Association is a good indication of our efforts being recognized by more and more professionals.

AES has successfully launched 10 projects with the sponsorship of the Professional Services Development Assistance Scheme ("PSDAS") which is funded by the HKSAR Government. The 11th project named "Enhancing Hong Kong Engineers' Experience and Knowledge on Sustainable Development of Green Transport in Hong Kong and the Mainland" is well-advanced in progress. The reports can be viewed on our website. Apart from the PSDAS projects, the Association has also up to now been awarded 3 funding applications by the Hong Kong Construction Association ("HKCA") and for public policy researches. The 3rd project named "Review of Environmental Impact Assessment (EIA) Practices of Major Construction Works in Hong Kong – The Next Steps" is in good progress with the assistance of The Hong Kong Polytechnic University. We will continue to apply for the funding in future and



▲ 「香港年青工程師國情研習班 2012」

6 - 8 April 2012

members' ideas and proposals are welcome.

A "Dashun Distinguished Lecture" was organised by Dashun Policy Research Centre (of which I am Chairman), co-organised with AES and HKCA. Mr Norman T L Chan, Chief Executive of the Hong Kong Monetary Authority, was invited to deliver the speech on a topic of "Monetary Issues of Hong Kong". More than 100 participants attended the talk and there was a strong presence of engineers amongst the audience. For the future functions, AES will be associated with different professional organisations to organise different kinds of forums and conferences discussing various study topics, including the upcoming conference concerning "Prevention of Cancer" which jointly organised with Dashun and Happy Health Society and to be held on 22 December 2012.

Our Young Engineers Society (YES) has organised different community services, including cleansing day for elderly homes in housing estates in West Kowloon before Chinese New Year and has jointly organised with other young engineering organisations on various activities, such as 「香港年青工程師國情研習班」 in 2008 and 2012, Professionals' Nite and the Joint Society Christmas Party, etc which enhance their co-operation and also strengthen the connection amongst YES members with other young professional societies. Besides, YES has organised discussion forums on various hot topics including the Judicial Review of Hong Kong-Zhuhai-Macau Bridge project, the Third Runway of Hong Kong International Airport and the Northeast New Territories (NENT) New Development Areas. Comments on the NENT project have been submitted to the Government and published in newspaper. YES also organised a workshop for members who would attend professional assessment for Civil discipline of The HKIE. More similar workshops will be organised for members in other disciplines. Besides, YES consolidated and submitted AES members' views on promoting engineering professionals and construction industry to the government for 2013 Policy Address consultation.

In the coming year, AES will continue with its mission in promoting the involvement of professionals in social and political activities to express their views as well as encouraging more members, especially young engineers to attend public engagement/consultations. Year 2012 has been a fruitful year and your continuous support is vital to the sustained success of AES.

Raymond Ho



▲ AES PSDAS Projects - Testing & Certification Seminar

24 October 2012



▲ AES PSDAS Projects - Green Transportation Seminar

7 November 2012



Designed by Architect,  
Dr Tao Ho (何弢博士)



工程界社促會青年部就 2013 政府施政報告提出九項建議如下，並已提交政府，敬請細閱。

## 核心競爭力

香港工程界的發展，將會在 2013 年進入一個新紀元。香港工程界面對的，絕不是單純的繁榮昌盛。古語云：“盛世之下，必有隱憂”。工程界社促會一向倡導未雨綢繆的憂患意識，這些問題雖然還是隱患，但卻需要提起大家足夠的重視。本文收集了一些本會會員的心聲，由青年部總結出九項建議，希望提供給政府以供施政報告諮詢之用。

本港工程界的前途面臨諸多不明朗因素。無論內外環境如何變幻，提升自身的核心競爭力始終是根本解決之道。談到核心競爭力，專業人才是重中之重。目前本港工程界通行分判制度，這對於培養專業人才極端不利。有規模的企業不樂於培養自己的直屬人才。有高層管理人員反映：他們不敢培養自己的人才，尤其是前綫的勞工，因為培訓本身花費巨大，而市場環境大起大落，誰也無法保證培訓了大批的人才後會迎來慘淡的市場境況，繼而先前巨大的投資付諸東流。目前業界人才技術培訓的重任，很大程度上落在分判商的肩頭，而分判商對於人才的培訓又往往力不從心，不管是從財力上，還是從技術上，都難以提供全面的員工培訓。所以，如果希望培養真正屬於本港的高質素專業人員，還要靠大企業領頭，讓這些掌控著資金與技術實力的企業，真正擔當起培育後起之秀的責任。這不但需要企業家有眼光，有行動，更需要政府對企業注入足夠的信心，使得企業能得到長遠穩定的業務保障，他們方肯投資時間與精力培訓自己的員工，如果不這樣做，便無法使本港建造業的核心競爭力有實質性的提升。

反觀當下，政府似乎沒有意識到分判制度帶來的長久危害，政府本身的政策也在默許分判制度進一步擴張。政府公務工程作為全港工程界的表率，政府在其中的很多政策及指引起著明顯的標杆作用，但是現實中的營運模式卻是“非分判無以盈利”。更有甚者，連政府自身的很多職責，例如工程設計、審批圖則、甚至檢測樓宇僭建等都分判出去。政府現行的政策與運作會導致以上問題，應儘早進行檢討及徹底改革現有政策。

除了人才這個核心要素之外，政府也應當進一步優化政策環境。為培養本港工程界的核心競爭力營造更優越的氛圍。一方面在工程技術層面，政府的政策導向應當予以適度扶持，為工程界高新科技的發展提供更好的環境。目前高新科技的發展面臨兩個困境。公務工程對於高新科技的應用往往不持歡迎態度。業界人士普遍反映：現時很多政府部門官僚氣味濃厚，“看守政府”意味深重。主管的官員為免生事端，對於高新科技頗為抗拒。對於先前未曾使用過的新材料、新工藝幾乎採取抵制的態度。有些科技其實在歐美，甚至在中國大陸都已經不是新鮮事物；更有甚者，有些科技在港府其他部門都已經使用過，仍然要經過層層盤查。業界普遍反映，科技創新在本行業阻力巨大。如此這般，缺乏創新科技的基礎，本港工程界很難真正提高自身的核心競爭力。

另一方面在管理層面，本港在工程項目管理上表現卓越。即使近二十年來中國大陸工程建設行業發展迅猛，但在管理上，尤其是合約與造價管理以及安全環保、社區關懷等方面，仍然要向香港學習。政府應當珍視這筆寶貴的資源，做好包裝與外銷的工作，積極對外輸出管理的技術、經驗與理念，不要讓本港工程界寶貴的管理體系與相應的經驗，僅僅停留在比較優勢的層面。應當盡全力將這種優勢打造成為我們的核心競爭力，從而確保在今後長期的國際市場競爭中立於不敗之地。

另外，近年來工程建築市場環境的微妙變遷，也在無形中影響著我們核心競爭力的發展。近年來本地建築市場被外資或中資企業大量擠佔，本地工程企業的生存環境日益惡化。政府目前實行的採購招標制度，在一定程度上對擁有大規模資本及雄厚技術力量的企業過分有利，這些企業以悠久而優秀的工程經驗，與本地企業競爭，顯然具備壓倒性優勢。譬如隧道施工方面，有一些中資企業在全國範圍內經營諸多業務，各大城市的地鐵項目多有他們的份額。而實質上這些中資企業來本港營業的公司，祇不過是他們自身龐大集團的一個下屬子公司，與國內的諸多建設經驗並無太大關連。但他們卻能藉以計入自己的工程經驗，從而在投標過程中勝人一籌，本港工程企業在這方面顯得相當單薄無助。

目前本地企業出於無奈，祇得以聯營方式與外來者分一杯羹，而在聯營項目中所能做的，也祇是低端的部分，很難接觸到外來者所把持的核心技術。本港納稅人的資財大量外流，而本地產業與技術等之核心競爭力又未能成長壯大。長此以往，對本港核心競爭力的發展絕無益處。為此，政府在招標過程中，應當適度減低對於先前工程經驗的評分權重，以避免偏幫外資或中資企業，同時也避免無形中打壓本港核心競爭力的長遠發展。

## 人才短缺

專業人才是目前本港工程界最緊缺的資源，造成緊缺的首要原因是工程界業務的波動性太大，導致整體從業人員隊伍劇烈轉變。大約十年前的工程環境衰退使本地市場萎縮，慘淡的市場環境導致大量人才流失不返，更使得年輕一代徹底喪失對於本行業的信心和興趣。短短五年後，十大基建項目上馬，到現在，整個工程界日趨鼎盛，人手匱乏問題又浮現出來，專業人員與勞工市場均出現明顯缺口，而人才的培養需要時間，並非可以在三至五年的時間內恢復元氣。這個問題不但嚴重影響本地工程企業的經營運作，更會影響有關工程項目的效率與質量，很多業界人員都反映近年來工程界從業人員的整體質素下降，中層技術骨幹力量缺失，青年從業者得不到較好的培訓與指導，出品質量大幅退步，可見人才短缺問題的潛在危害相當巨大，極需正視及予以解決。

上述祇是就近年來的情況作了一個簡單的分析。從局部上看，人才短缺的現狀造成了諸多問題，而從宏觀角度俯視這個問題，則不難發現，市場行情不管是猛然上升，或是驟然下降，都不利於工程界從業隊伍的長遠發展。過去的經驗說明，大規模吸納或解僱工程從業員會嚴重打擊工程項目的運作及公眾對工程行業的信心，從而影響工程隊伍的數量與質量。政府在這方面應當吸取教訓，在長遠規劃上做足功夫，避免工程界人員的大起大落。

具體來說，政府在規劃過程中，應當考慮得再周全一些，這一點已經是全港社會公認的問題。在十大基建陸續上馬的空前盛況之下，業界普遍對於前途存在深重的隱憂。經歷過去工程業界的興衰，很多業界人士對五年之後的前景表示不信任。讓人更加不安的是，政府現時仍未就將來的工程規劃及發展作全面諮詢，亦沒有設定任何機制以確保工程項目在長遠上能均衡發展，這樣的結果除使到工程業界對前景感到憂慮外，最重要是令致香港缺乏一個宏大而又可持續發展的城市建設之願景。政府作為全港的管理者，應當負起當家人的責任，以長遠的角度規劃香港的工程發展。現在政府的規劃很多時候明顯祇著眼於任期內，或祇解決當時的問題。如果不轉變這種根本意識，想切實提高規劃的長遠戰略眼光完全是空談。另一方面，我們可以看到現時的官員在以前長期從事執行上層政策而很少有真正參與長遠的規劃工作。這導致回歸後的政府無所適從，尤其在規劃方面比較短視。本會強烈呼籲政府在這方面加強培訓，首先應當全面諮詢工程業界對前景的意見，制定能讓工程項目在長遠上能均衡發展的政策，有關政府官員應培養出有不斷學習的意識，多方吸納工程規劃人才，聽取專業人員意見，才能有效提高規劃能力。

人才短缺的一個深層次原因，便是社會普遍對工程師的認識嚴重不足，這其中固然有工程界人士本身低調的原因，但是政府在這個問題上亦不應袖手旁觀。政府過往曾經動用公共資源，譬如電視媒體等宣傳媒介，來提升律師和醫護人員的形象，而替工程師專業介紹的宣傳祇佔少數。據很多從海外回流本港的工程界人士反映，在西方國家工程師的社會形象要高於律師和醫護人員，而在香港工程師的形象不但不及其他專業人士，更重要是市民對其專業工作一知半解，因而不被整體社會認同為與醫生或律師等同水平的專業。

工程界社會形象的偏差所造成的後果是顯而易見的，這很直接地導致了人才短缺。改善了專業形象，工程界才能不斷吸引年輕一代為行業補充新血。政府在這方面需要加強有關的宣傳工作，協助工程界提升自己的形象。具體而言，提高工程界薪酬待遇應是根本的措施，西方社會對工程師極之重視，與工程師的收入水平有直接關係。三十年前本港工程界的收入在整體社會的相對位置比現在要高，往時工程師的社會地位相應也比現時為高。事實上，相對於其他專業，現時工程界人士的回報是頗低的，提高工程界的待遇是符合其對社會貢獻的適當舉措，我們相信現時工程從業員的規模應不會為政府帶來太大的財政負擔。另一方面，政府可借用公眾媒體的力量進行宣傳，轉變工程界在公眾心目中專業水平不足的形象。另外在院校招生方面，政府應多向學生宣傳工程專業，從而鼓勵他們報讀工程科目，這樣也可提升工程師在社會的專業形象，從而從根本上解決工程界人才短缺的困境。

現時社會面對的各種問題實與工程界有很大的關連。問題的形成非一日之積，其化解之道也非一日之功，這需要工程界，政府與全社會的共同努力，其中的重中之重是對憂患意識的認知及取得社會整體共識的方法。工程界社促會願意為此付出努力，對政府各項政策及發展項目收集並發表工程界的看法，期望能更積極地平衡社會不同的意見，為香港建設更美好的將來作出貢獻。



## 工程界社促會青年部本年首次聚會

Conan SHEN

2012年7月7日，工程界社促會屬下青年部舉辦了本年度第一次聚會，來自工程界的朋友們歡聚一堂，度過了一個愉快及充實的上午。

當日聚會於中環中心聯合專業會堂舉行，本會主席何鍾泰博士工程師、青年部主席區德祈工程師、會員以及修讀工程學系學生多達80人出席聚會。現場氣氛輕鬆愉悅，彼此暢談工程界的大好形勢以及未來的發展前景。本次聚會我們有幸邀請到兩位嘉賓：現任香港特別行政區政府發展局常任秘書長（工務）**韋志成工程師**，以及現任建造業議會主席**李承仕工程師**特地出席我們的聚會，分享了工作經歷及對工程界現狀的見解和未來的展望等等。

首先，由**何鍾泰**博士工程師作出熱情洋溢的開場歡迎，他指出新時代、新形勢對年青工程師的各種挑戰，如何積極準備應對各難題及把握新機遇等等。出席者均以青年居多，大家對何博士的精彩分析都報以深深的認同。

接下來**韋志成**工程師詳細分享了香港基礎設施建設的前世今生。真是不說不知道，原來香港工程史很有趣，比方說新機場的建設過程中，動用了巨大資源，連今天工程界都難以比擬！大家只專注於本職工作，很少回顧歷史，特別對於理工科出身的我們而言，歷史的興趣及認識不深，然而聽了韋工程師的一席演講，我們對歷史意義有了深層次的認知。正如英國文藝復興時期思想家弗朗西斯·培根所言「凡有學者，皆成性格……讀史使人明智。」令大家學會準確把握業界今後的動向，必須對過去有清晰的了解及認知，以史為鑑，方足以成就大事。韋工程師旁徵博引，以過去的發展歷程為依照，對香港工程界前景作出展望。大家均表贊同及精神振奮，並對前景充滿熱誠。

緊接著，**李承仕**工程師分享了工程師的社會責任。李工程師於工程界歷練多年，見識了很多不曾想像的雨雪風霜。他退休後仍心繫業界，在各個領域擔任了數份公職，善用本身專業知識回饋社會，晚生們敬佩之餘，也對工程師的社會責任有了新的認識。李工程師擔任的公職當中，



青年部主席區德祈工程師  
▲致感謝辭



▲本會屬下青年部舉辦本年度第一次聚會，工程界朋友們歡聚一堂



主席何鍾泰博士工程師致送  
紀念品予李承仕工程師



主席何鍾泰博士工程師致送  
紀念品予韋志成工程師

以建造業議會主席最為令人反思，全因建造業議會的成立，及其後的十年奮鬥經歷了許多曲折才有今天的成果。我們均以工程界的文化為自豪：安全、環保、社區關懷、合約精神等等融合在一起，構成了香港工程界的價值品牌，而這珍貴的無形財產也是香港工程界藉以對外輸出的重要資本。作為青年工程師的我們，理應關注這筆財產累積的過程及學習前輩們的努力。聽了李工程師的分享，深知今天的成果來之不易，感受到肩負責任之重。

分享結束後，大家暢所欲言，自由提問，更加深化了這一上午的豐富收穫。在此再次感謝**韋志成**工程師與**李承仕**工程師的光臨及精彩分享，使得會員們獲益良多，充實了這次聚會，對前景充滿熱誠及期待！



## Workshop on Professional Assessments for Civil Discipline of The HKIE

Herman AU

In order to allow AES and YES members who have applied for The HKIE Civil Discipline Professional Assessment this year to fully understand and familiarize themselves with the format and difficulties in the relevant presentation and interview, YES conducted a workshop on Professional Assessment for Civil Discipline of The HKIE ("Workshop") on 3 October 2012. The main theme of the Workshop is to simulate an environment of the Professional Assessment, in which all participants would have chance to present their project report, and would be followed by an interview. Participants were required to answer the questions which were arisen from our mock interviewers and other participants.

We are pleased that the Workshop was greatly supported by our AES Chairman, Ir Dr Raymond HO, and our AES seniors, namely Ir Victor LO, Ir P.K. LEE and Ir Ringo YU who gave us a lot of valuable advice and kindly acted as mock interviewers at the Workshop. There were total 7 nos. of participants who enrolled at the Workshop and three of them presented their project report and sat in the subsequent mock interview. Most of them could demonstrate that they had sufficient understanding of the principles of professional engineering required for the class of The HKIE member, as well as outstanding quality of exercising professional judgment to solve various kinds of engineering problems. Through attending the Workshop, our participants realized that they should be more familiarized with all aspects of engineering including types of contract, cost control, contractual law, technical issues in design and construction, site safety, environmental issues, etc. in order to get prepared for the Professional Assessment.

In conclusion, the participants at the Workshop could get valuable practical experience of presentation and interview for the Professional Assessment. They could have in depth discussion with our mock interviewers on their performance of presentation and interview. Other key techniques of interview, such as format of presentation slides, tips on interview questions, skill of presentation, etc. were also shared amongst mock interviewers and participants.

We would like to take this opportunity to express our sincere thanks to our AES seniors for their kind support and giving us valuable advice for preparing professional assessment. We look forward to organizing similar workshops for our members who will sit in the coming professional assessments next year for Civil or other disciplines.



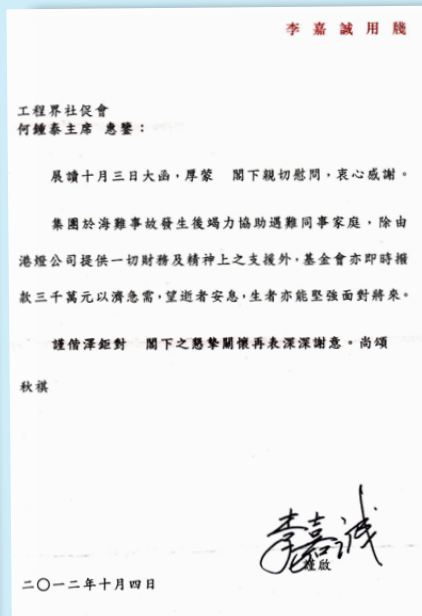
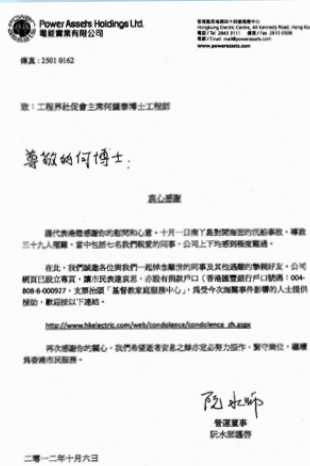
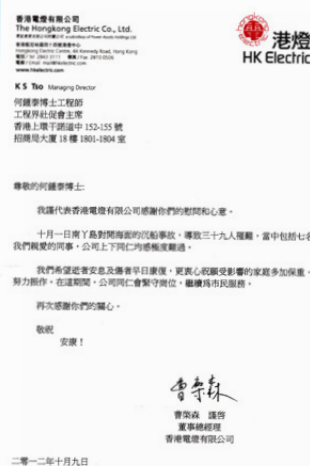
▲ Workshop on Professional Assessments for Civil Discipline of The HKIE

3-4 October 2012



## 南丫島撞船意外

於2012年10月1日慶祝國慶的晚上，突然傳來南丫島對開海面的撞船意外，兩艘渡輪相撞，共39人遇難，多人受傷及危殆，本會對此感到非常難過及遺憾。電能實業有限公司（前「香港電燈公司」）為本會的創會公司會員(Founding Company Member)，素來積極支持本會活動。本會已於10月3日致函予長江集團主席李嘉誠先生、電能實業有限公司當時的集團董事總經理曹榮森工程師及現任的集團董事總經理尹志田工程師、營運董事阮水師工程師，對遇難者表達本會會員的沉痛哀悼，主席何鍾泰博士、工程師及義務秘書李炳權工程師並簽署弔唁冊寫上祝福，向傷者及遇難者親屬致以最誠摯深切的慰問，希望傷者早日康復，共同渡過這悲哀難關。



## Seminar on "Testing & Certification - Standard & Professional Knowledge"

Curtis TO

Seminar on "Testing & Certification – Standard & Professional Knowledge" was successfully held on 24th October, 2012 in the Joint Professional Center. Around sixty professional engineers from different fields in the construction industry attended the seminar with enthusiasm.

Introduced by Ir LEE Ping-kuen as the session chair, the speakers delivered their presentation one after another. Mr John HUNG Leung-bun, Secretary-General (Testing and Certification), Innovation and Technology Commission, The Government of the HKSAR, started off the seminar with a broad introduction of the testing and certification industry in Hong Kong. Afterwards, Ir Prof Peter MOK Kwok-woo, Chairman of Hong Kong Quality Assurance Agency focused on the promotion of sustainability and how to achieve such goals with testing and assessment services. Ir CHEUNG Chin-keung, Honourable President of Hong Kong Institution of Certified Auditors then covered the waterworks product qualification in great detail. Finally, Mr WONG Ka-man, Technical Manager of Castco Testing Centre Ltd., introduced various kinds of testing methods in drainage products.

The seminar was smoothly held and the audience was exposed to a wealth of knowledge in the qualification sector in depth and in breadth.



▲ Seminar on "Testing & Certification – Standard & Professional Knowledge"

24.12.2012



# Seminar on “Sustainable Development of Green Transport in Hong Kong and the Mainland”

John YUEN

Concerning the hot discussion about green and low-carbon transport, a seminar on “Sustainable Development of Green Transport in Hong Kong and the Mainland”, organized by AES, was held successfully on 7th November 2012 at Joint Professional Centre, Central. We are honoured to have Mr Andrew Lai, JP, Deputy Director of Environment Protection, Environmental Protection Department, The Government of the HKSAR, to be the Guest of Honour and the Keynote speaker.

## 1. Welcome Remarks

As a kick-off of the seminar, Ir Dr Raymond HO Chung-tai welcomed all the guest speakers and audience by addressing the importance of promoting the low-carbon technology to achieve sustainable development.

## 2. Keynote Address – Greening our Land Transport

Mr Andrew LAI, Deputy Director of Environment Protection, Environmental Protection Department, The Government of the HKSAR stressed how serious the current air quality is and how much the road transport contributes to air pollution. To ease the situation, the government has issued measures to improve Roadside Air Quality, includes (1) revising vehicle emission & fuel standards, (2) Setting tax incentive for environmental-friendly vehicles, (3) early replacement of old diesel vehicles, (4) reducing emissions from taxis and light buses and (5) reducing emissions by franchised buses. Focusing on green transportation method, Mr Lai mentioned the promotion of Electric vehicles by (1) Financial Incentives, (2) Pilot Green Transport Fund, (3) Infrastructural support for existing and new buildings.



## 3. Green Journey – Solar-hybrid Catamaran and Solar-powered Golf Carts

Ms Gillian LEUNG, Deputy General Manager of The Jockey Club Kau Sai Chau Public Golf Course Ltd. shared the use of solar golf carts and solar hybrid catamaran in Kau Sai Chau. Operating with solar golf carts and solar hybrid catamaran, CO<sub>2</sub> emissions can be reduced by 30 tonnes and 158 tonnes per year respectively, HK\$ 400,000 and HK \$560,000 operation cost can be saved respectively.

Mr Robert DANE, Chief Executive Officer of Solar Sailor Holding Ltd. introduced the SolarSails, sails act as both propulsion sails and sun-tracking solar collectors, and SS HK Solar Hybrids, powered by SolarSails, batteries and diesel. This Hybrid Marine Power Technology is safe and reliable. It can help to lower carbon emissions and save fuels.

## 4. Aviation and Sustainable Development

Ms Evelyn CHAN, Environmental Projects Manager of Cathay Pacific Airways Ltd. explained the challenge of rocketing carbon emissions by aviation and how Cathay Pacific Airways face this problem. (1) In technological progress, Cathay Pacific Airways improves the fuel efficiency and introduce new fuels. (2) In operational efficiency, they optimize flight routes, flight techniques and aircraft maintenance. (3) They improve infrastructures by improving global ATM collaboration. (4) In economic instruments, they promotes

positive economic instrument, carbon trading and carbon offset programme.



## 5. Developing EV Charging Infrastructure & Facilitate Wider Adoption of EV in HK

Mr Edmond CHAN, Senior Smart Grid Infrastructure Manager of CLP Power Hong Kong Ltd. introduced the advantages of Electric Vehicles (EV) like zero emission and cost saving. To promote the use of EV, the government issued policies and facilitated building EV charging facilities. Supporting government's action, CLP assists the government in building charging infrastructure, sourcing, adopting and promoting suitable EVs.

## 6. An innovative Solution for Green Transport - Switching off Idling Engine Automatically

As introduced by Mr Desmond LIU, Consultant of Hong Kong Productivity Council, The Hong Kong Productivity Council has developed the ISAC Automatic Engine Idlestop and Supplementary Air Conditioning System (ISAC). The Idlestop Unit can stop the engine in appropriate stationary condition and restart the engine right before the vehicle is to be driven again. The Supplementary air conditioning unit supplies conditioned air to the cabin by hybrid-driven compressor during engine idlestop.

## 7. Towards Green Transportation

Ir Dr Glenn H FROMMER, Head of Sustainability Development of MTR Corporation Ltd. explained how MTR committed to green transport through technology aspect, operation aspect..... By doing so, the carbon emission can be lowered and costs in powering the trains can be saved.

## 8. Green Sea Transport with Ship Quality Control

According to Mr M Y CHAN, General Manager (Ship Safety Branch) of Marine Department, The Government of the HKSAR, Marine Department has introduced measures to prevent pollutions and emissions. (1) Introduction of international regulatory measures to shipping; (2) Prevention of oil pollution; (3) Prevention of air pollution; (4) Other MARPOL measures imposed by International Maritime Organization; (5) Use of Liquefied Natural Gas as ship's fuel; (6) Use of Marine shore power; (7) Optimizing Ballast water management; (8) Ship Recycling; (9) Port State Control; (10) Flag State Quality Control System; (11) Communication and Cooperation with the industry

## 9. 內地綠色運輸

Apart from Hong Kong, Mainland China also induces the green transport. Prof Li Li-fu ( 華南理工大學機械與汽車工程學院汽車研究所教研室 李禮夫主任 ) explained the progress of manufacturing vehicles with more environmental friendly systems. To tackle the pollution problem in China, the engines of China-made vehicles are improved to reduce carbon emissions.



## 1. Introduction

The former Secretary for Transport and Housing, Ms Eva Cheng, spoke on 18 June 2010 at the "Green Transport in Hong Kong, Asia's World City" exhibition and seminar in Shanghai, which was part of Hong Kong's participation in World Expo 2010 Shanghai China (Shanghai Expo). In her speech titled "Green Transport in Hong Kong", Ms Cheng shared Hong Kong's experience and strategic directions in developing a green transport system. Ms Cheng highlighted to the Mainland and overseas audiences that around 90% of Hong Kong's residents used public transport every day, and the growth private car ownership was very low in Hong Kong, only 56 private cars per 1,000 population, thus significantly reducing congestion on Hong Kong's roads.

Ms Cheng outlined 4 key strategies for the sustainable development of Hong Kong's transport system, which were:

- (a) Integration of transport and city planning;
- (b) Encouraging the use of railways and walking to reduce the demand for land transport;
- (c) Improving the management of transportation and the efficiency of land transport;
- (d) Adopting green technologies to reduce pollution

Based on the outline of the above 4 key strategies for sustainable development of Hong Kong's transport system, the Association of Engineering Professionals in Society Limited (AES) applied for Professional Services Development Assistance Scheme (PSDAS) funding in early 2011 for the project title: Enhancing Hong Kong Engineers' Experience and Knowledge on Sustainable Development of Green Transport in Hong Kong and the Mainland (促進香港工程師對綠色運輸可持續發展的經驗與知識).

The Project aims to provide a platform for Hong Kong engineers to enrich their knowledge and experience for sustainable development of green transport in Hong Kong, with the objectives to enlighten the environmental engineering practitioners with long-term technical and business insights for formulating strategies for the sustainable development of transport system in Hong Kong. The application which includes a 4-day delegation visit to Shanghai and Hangzhou and a one-day seminar was successfully approved.

## 2. Delegation Visit to Shanghai and Hangzhou

The project delegation with 16 delegates visited Shanghai and Hangzhou between 3 and 6 June 2012. The following paragraphs summarise the meetings with government officials and visit of the delegation.

### 2.1 Meeting with Shanghai government officials

與上海市經濟和訊息化委員會領導會面交流 (主管節能  
和新能源汽車開發及應用)

The delegation held a meeting with the Shanghai government officials (上海市經濟和訊息化委員會) including Mr. Peng Bo (彭波), Vice Director-general of the Department of Hong Kong and Macao Affairs People's Government of Zhejiang Province (浙江省人民政府港澳事務辦公室) to discuss their planning on the green transport policy. Mr. Peng outlined the green transport policy implemented during the Shanghai Expo:

- (a) Public transport should be considered as the primary means for travel.
- (b) The vehicles running within the inner ring road should have the environmental protection label. The exhaust emission of new vehicles must reach the national Class IV standard (equivalent to European IV standard).
- (c) Motor and non-motorized vehicles are not allowed to toot horns all day long within the outer ring road.

- (d) "Zero emission" of motor vehicles (except special vehicles) should be realized in the Expo Site.

According to Mr. Peng, development of electric vehicles (EV) would be the direction of green transportation in Shanghai. However, some environmentalists might argue that "an increase in electric cars is likely to lead to greater production of power without necessarily reducing the use of gasoline for non-EV cars." Furthermore, the EV battery development is still in progress to overcome the drawback of electricity storage capacity, charging speed and operation life of battery.

Recently the Shanghai Government has announced plans to spend RMB100 billion improving support infrastructure for EVs, including charging stations, to create a sustainable transport network in Shanghai.

### 2.2 Delegation visit to Shanghai Automotive Industry Corporation (SAIC) 與上汽集團 - 汽車新能源汽車事業部、商用車技術中心代表會面交流

The delegation also visited SAIC, the largest automaker in the Mainland. According to SAIC, there were two plans on green transport policy which are The Energy Saving and New Energy Vehicle Development Plan (2011-2020), and the Automotive Industry 12th Five-year Plan (2011-2015). The Ministry of Industry and Information Technology (MIIT) drafted these plans, and subsequently were approved by the State Council. They came out by the end of 2010. The plans become the directive policy for the entire new energy vehicle industry in China in the near future.

At the moment, the EVs still cannot replace petrol vehicles as a long distance transport means. Although electric motors are very close to being 100% in efficiency, there are other components requiring improvement to achieve the desire efficiency of EVs, such as battery chemistry, electronic drive systems (controllers, inverters, charging systems, etc.), materials science (allowing lightweight, strong car bodies and suspension). The Shanghai Government together with automotive industry such as SAIC and the research institutions are jointly exploring the technologies to tackle these shortfalls. It is expected that there will be rapid progress in the improvement of these components in the near future.

### 2.3 The Fleet of Green Electric Buses for the Shanghai Expo

上海世博會園區綠色交通運輸項目

During the 183 days period of the Shanghai Expo event, almost every official vehicles for the Expo were EVs. They were powered by fuel cells, batteries, hybrid or supercapacitors. Supercapacitor buses were used in its regular metro system in Shanghai.

Supercapacitors (also called ultracapacitors) normally can only store about 5% of the energy that lithium-ion rechargeable batteries hold, limiting supercapacitors to only a couple of km per charge. This makes them ineffective as a general energy storage medium for passenger cars. The situation will be even worse when more electricity is required for air-conditioning. Also the supercapacitors will overheat at high temperature. An automatic safety lock will be applied to avoid operating over 50°C. However, supercapacitors can charge much faster than ordinary batteries, so vehicles such as buses that have to stop frequently at where charging facilities can be provided such as bus stops, can adopt supercapacitors.

The Shanghai super-cap buses run without continuous overhead

lines by using power stored in large onboard electric double-layer capacitors (EDLCs), which are quickly recharged whenever the buses stop at any bus stop (called electric umbrellas), and fully charged in the terminus.

As the buses have very predictable routes and need to stop regularly every 5km or so, allowing quick recharging at charging stations at bus stops is feasible. At the bus stop, the collector on top of the bus rises about 1 m and touches the overhead charging line. Within a couple of minutes, the supercapacitor banks installed under the bus seats are fully charged. The buses can also recover energy from regeneration braking or running downhill. The supercapacitors are ideal for a vehicle making frequent and regular stops.

It is learnt that in future recharging stations can be equipped with solar panels, a renewable energy which will give 30 km of range per charge or better is planned.

There were also more traditional electric buses running on lithium-ion batteries in the Shanghai Expo. To keep constant service, the batteries could be swapped when empty and recharged overnight, thus keeping battery packs stocked in fresh.

## 2.4 Meeting with the Hangzhou Government officials 與杭州市政府官員會面交流（瞭解杭州綠色交通運輸 近況與發展）

After visiting Shanghai, the delegation travelled to Hangzhou. The delegation met with the Hangzhou Government officials and learnt how the policy of the bicycle sharing system (BSS) was formulated, how its operation could benefit to Hangzhou citizens, and what are the problems arising from the operation. The countries with the most BSS are France, Spain, China, Italy, and Germany.

The Government officials introduced that the Hangzhou BSS was launched in June 2008 and had only 2800 bicycles. In December 2010 the Hangzhou BSS, with around 23,000 bicycles and over 2,400 stations, has been operated as the largest BSS in the world. It is followed by the Vélib' in Paris, which encompasses around 20,000 bicycles and 1,450 bicycle stations. Hangzhou citizens said that you will see a Hangzhou public bicycle passing if you stand at anywhere in Hangzhou for one or two minutes.

The purpose of the Hangzhou BSS is to provide a free public bicycle system network for citizens and tourists. The bicycles act as a feeder into its public transit network. Hangzhou BSS can promote not only cycling exercise for the health but increasing mobility choices, improving air quality and reducing traffic congestion.

At Hangzhou city centre, there are 2,050 stations, each at about 300 m from the other. The stations are convenient and on average there are about 240,000 daily trips. Its popularity and success have set a new standard for bicycle sharing in Asia. From environmental and low carbon emission points of view, BSS is the most green transport system. And the Hangzhou city is planning to further improve its BSS to have 175,000 bicycles by 2020!

In addition, the use of BSS programs addresses some of the problems that bicycle owners are facing including loss from theft or vandalism, lack of parking or storage space, and maintenance requirements. It is noted that public bicycle sharing programs is costly unless there are subsidies by commercial interests. Hangzhou

BSS is partly subsidised by the city government and partly sponsored by commercial advertisements on bicycle stations or the bicycles themselves.

## 2.5 Hangzhou bicycle sharing system 杭州自行車共用制度

In order to solve the lost and theft problem, Hangzhou authority introduces innovative approach to urban mobility such as improving bicycle design, sophisticated docking station and automated smartcard bicycle locking and payment systems.



Visitors can rent a bicycle and tour around the city freely. The bicycle serving spots serve from 06:00 - 20:00 daily. For renting a bicycle, one needs a Transportation Smart Card which can be applied at the Smart Card Centre. You need to show your ID and store at least RMB300 in your new card. The Smart Card Centre opens from 08:00 to 17:00 daily. When returning the bicycle, you need to make the bicycle locked by the electric locker, and put your card on the locker when the green light is on. The return of the bicycle is success when the green light stops shining and the buzzer beeps.

## 3 Conclusion and Recommendations

According to Environmental Protection Department of Hong Kong, motor vehicles are the main source of our roadside air pollution. They cause about 18% of local greenhouse gas emissions. The transport sector (including road and marine transport) is the second largest air pollution source in Hong Kong, accounting for about 37% of the local respirable suspended particulates and nitrogen oxides each and 6% of sulphur dioxide.

Based on the Shanghai Expo experience, there are still drawbacks in the use of electric buses of which research to improve the current technology is required. The Hong Kong government should encourage the transport sector to test out green and innovative technologies. The two local power companies, the franchised bus companies, the government and quasi-government establishments should be encouraged to conduct trials and research in studies, in collaboration with the universities, to explore the use of electric vehicles as a public transport.

After the visit to Hangzhou and the experience gained in riding the public BSS, the delegation recommends that Hong Kong Government should explore the possibility of operating a BSS in Hong Kong. The convenient locations of operating the BSS in Hong Kong would best be in the newly developed areas, such as North Eastern New Territories, Tseung Kwan O, East Kowloon District where planning of the BSS stations could be made in conjunction with the development such that the BSS stations can be close to MTR Stations.

As Hong Kong has many coast lines, it will be enjoyable to see the beautiful harbour water front whilst riding on a public sharing bicycle.

Funding Organization:



THE GOVERNMENT OF THE HONG KONG  
SPECIAL ADMINISTRATIVE REGION

"Any opinions, findings, conclusions or recommendations expressed in this material / any event organized under this Project do not reflect the views of the Government of the Hong Kong Special Administrative Region or the Vetting Committee for the Professional Services Development Assistance Scheme

## Congratulations to 熱烈恭賀

工程界社促會會長胡法光工程師於 2012 年 11 月 13 日獲香港城市大學頒授榮譽社會科學博士。



胡曉明（右）在典禮中祝賀爸爸胡法光（中）及盛智文獲頒榮譽博士學位。

工程界社促會顧問胡曉明工程師及會員姚祖輝先生於 2012 年 12 月 19 日成功當選中華人民共和國香港特別行政區第十二屆全國人民代表大會代表。

## 工程界社促會第 15 屆 會員周年大會

工程界社促會第 15 屆會員周年大會於 2012 年 11 月 19 日假上環北園酒家圓滿舉行，會員踴躍出席。

大會由主席何鍾泰博士、工程師主持，匯報過去一年來會務概況，並簡讀會長報告及財政報告。此外，由義務秘書長李炳權工程師簡讀義務秘書長報告。

高級副主席李銘清工程師及樂法成教授、工程師亦有出席主持大會。



第 15 屆會員周年大會團體照

▼ 19.11.2012



## Submissions and Public Engagements

### List of Submissions

- 1 青年部就「新界東北新發展區規劃及工程研究」第三階段公眾參與向土木工程拓展署與規劃署提交意見 -- 2012 年 9 月 4 日
- 2 於「立法會發展小組 2012 年 12 月 8 日會議」就「新界東北新發展區規劃及工程研究」提交題目為「在東北，謀新天」的意見 -- 2012 年 12 月 8 日
- 3 青年部為 2013 政府施政報告建言「盛世之下 勿忘隱憂」 -- 2012 年 12 月

### AES representatives attended the following events to give support to the projects concerned:

- 1 Focus Group Meeting on "Our Future Railway Stage 1 Public Engagement" on 12 May 2012.
- 2 Legislative Council Panel on Development: Special meeting to receive public views on North East New Territories New Development Areas Planning and Engineering Study on 8 December 2012.

### AES acted as co-organiser/supporting organisation at the following events:

- 1 四川省科協聯同本會暨 512 年青工程師大聯盟、京港學術交流中心組織四川汶川七一映秀中學師生團赴港交流 -- 2012 年 5 月 23 日 - 27 日
- 2 本會與 512 年青工程師大聯盟及四川省科協，舉辦汶川映秀小學及德陽袁家可育學校師生北京夏令營 -- 2012 年 7 月 31 日 - 8 月 3 日
- 3 香港科技界慶祝中華人民共和國成立 63 週年國慶聚餐晚會 -- 2012 年 9 月 27 日
- 4 Joint Society Christmas Party organised by AES-YES, ASHRAE-YMC, HKIE-YMC, ICE HKA G&S, ICES, IET-YMS & IMechE-YMS; supported by HKWTO on 15 December 2012
- 5 本會與大舜政策研究中心協辦「人人健康由我做起 - 中西結合 預防癌症」論壇 -- 2012 年 12 月 22 日